

Green Innovation Report

Toray Industries, Inc. - 2024

ISIN: JP3621000003, Ticker: 3402, Country: JP, Sector: Commodity Chemicals

This report evaluates the green innovation activities of the company over the past decade, based on inventions published in green technology areas defined by the <u>IPC Green Inventory</u>. This inventory, established by the World Intellectual Property Organization, identifies technologies aligned with the United Nations' definition of Environmentally Sound Technologies. These innovations contribute to mitigating humanity's impact on climate change in support of the Sustainable Development Goals.

Innovation Metrics

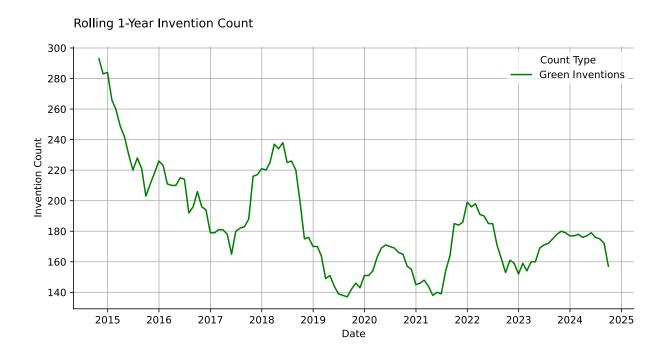
Invention Count (last 12 months)

Green Invention Count (last 12 months)

934 Inventions

157 Green Inventions

Each invention reflects a substantial investment of R&D and legal resources. Consequently, green inventions provide a reliable and high-integrity metric for measuring a company's innovation efforts in green technologies and sustainability.

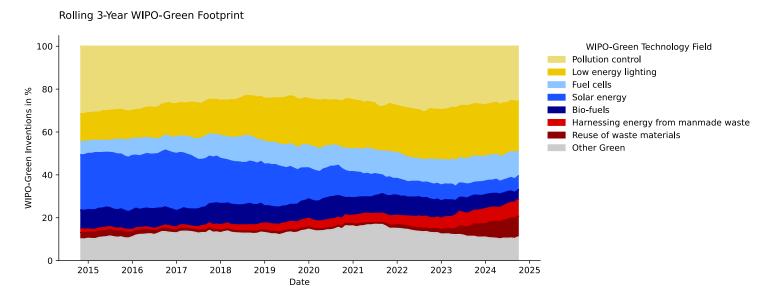


The graph above illustrates the number of green inventions published by the company over the past decade. Data is presented monthly, with each point representing the total green invention count for the preceding 12 months.



Green Technology Footprint

The graph below showcases the temporal distribution of the company's green innovation activity across technology fields listed in the IPC Green Inventory. This distribution highlights the green technology footprint and its evolution as part of the company's innovation strategy.



The table below provides a quantitative analysis of the growth and significance of the company's key green technology fields. For each field, the most frequently appearing keywords in recent inventions offer valuable insights into the company's green innovation activities.

WIPO-Green Technology Field	Absolute Growth (3y)	Percentage of Green Inventions (3y)	Keywords (3y)
Pollution control	144	25.8%	gas separation membrane, separation membrane module, separation membrane, gas separation, separation membrane element
Low energy lighting	130	23.3%	organic el display, photosensitive resin composition, color conversion, resin composition, cured product
Fuel cells	64	11.4%	electrolyte membrane, catalyst layer, membrane electrode assembly, gas diffusion electrode, polymer electrolyte
Reuse of waste materials	54	9.7%	polyester film, monomer production, sulfide resin composition, resin composition, polyurethane elastic fiber
Harnessing energy from manmade waste	44	7.9%	ϵ caprolactam, waste lithium secondary, spent lithium ion, lithium secondary battery, lithium ion battery
Solar energy	36	6.4%	photovoltaic element, resin composition, electronic component, vapor deposition film, type photovoltaic element
Bio-fuels	25	4.5%	chemical product, α hydromuconic acid, pharmaceutical composition, hydroxyadipic acid and/or, aromatic hydrocarbon

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